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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/605,375 | 09/25/2003 | Dean M. Homan | 20.2848 | 2374 |

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EXAMINER

WHITTINGTON, KENNETH

ART UNIT PAPER NUMBER

2862

DATE MAILED: 03/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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| | | | |
|------------------------------|--|-------------------------------------|--|
| Office Action Summary | Application No. 10/605,375 | Applicant(s) HOMAN ET AL. | |
| | Examiner Kenneth J Whittington | Art Unit 2862 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 2862

DETAILED ACTION

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are how current shorted near the antenna is passed through the antenna. The invention as described in the specification states that the conductive path runs through the sleeve to short the current in a manner that would not couple with the antenna (See Disclosure paragraph 0031). Thus, the claim is inconsistent with the specification and fails to include such features showing how the current passes through the antenna. For purposes of examination, this

Art Unit: 2862

claim will be interpreted to mean that the current passes through the sleeve, through the conductors and into the inner support.

5 ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

10 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15 Claims 1-7, 13, 16-22, 26, 32, 33-35, 39, 40, 45 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Sinclair (US 5,233,522). Regarding claims 1-6, 13, 16, 18-21, 32, 34, 39, 40 and 45, Sinclair discloses a borehole tool having several sensors (antennae) thereon and comprising:

20 a sleeve housing the sensors therein and protecting the sensors from fluid in the borehole that is transparent to the EM signals and is conductive to pass electric current from the housing to the inner core of the tool (See Sinclair FIG. 7, item 90 and col. 12, line 52 to col. 13, line 10).

Art Unit: 2862

a conductor within the sleeve to pass electrical current from the sleeve into a metallic inner core (See FIG. 7, items 91 and 88).

Regarding claims 7, 17, 22, 33, 35 and 46 the sleeve of Sinclair includes a composite material including woven glass impregnated with an epoxy composition containing carbon and graphite materials.

Regarding claim 26, as best understood in view of the rejection above, the apparatus of Sinclair would short the current near the antenna such that it passes through the sleeve.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 2862

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8-10, 23, 24, 36 and 37 rejected under 35 U.S.C.

103(a) as being unpatentable over Sinclair in view of Levin (US 4,590,122). Sinclair teaches the limitations of claims 1, 18 and 34 as discussed above. However, while Sinclair discloses the use of carbon or graphite in various forms in the composite for the sleeve, it does not disclose the particular structural features or procedural steps to make the composite. Levin teaches it is well known in the art to use highly conductive carbon or graphite in woven fabrics or layers, one or more layers being used in composite materials (See Levin col. 1, line 7 to col. 2, line 17). It would have been obvious to make the composite sleeve of Sinclair in the manner having the internal structures discussed in Levin. One having ordinary skill in the art would have been motivated to do so produce a structural material having high strength, light weight, high resistance to fatigue or failure and corrosion resistance (See Levin same portion).

Art Unit: 2862

Claims 11, 12, 28, 29, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair in view of Issenmann (US 4,684,946). Sinclair teaches all the limitations of claims 1, 4, 18, 19, 34 and 40 as discussed above. However, Sinclair does not explicitly teach a second sleeve disposed inside the sleeve. Issenmann teaches an outer conductive sleeve with an insulating second sleeve contacting the inner surface of the sleeve, such sleeve being transparent to EM radiation and having openings therein for a conductive member to pass therethrough (See Issenmann FIG. 4, item 14 and col. 5, line 53 to col. 7, line 39). It would have been obvious to apply the inner insulating sleeve as taught by Issenmann to the conductive sleeve as taught by Sinclair. One having ordinary skill in the art would have been motivated to do so to prevent leakage from the conductive metal outer sleeve to particular inner electrical components, while at the same time, passing current through a conductor to other particular components (See Issenmann same paragraphs).

Claims 14, 15, 30, 31, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair in view of Estep et al. (US 6,712,146). Sinclair teaches the features of claims 1, 13, 18, 19, 34 and 40 as discussed above. However,

Art Unit: 2862

Sinclair does not explicitly disclose a recess on the inner surface of the sleeve. Estep et al. teaches a recess on the inner surface of the outer member having locking members therein (See Estep et al. FIGS. 3-6, recesses 93 and locking members 132). It would have been obvious to incorporate a recess and locking member as taught by Estep et al. into the conductive sleeve and disc members as taught by Sinclair. One having ordinary skill in the art would have been motivated to do so to provide a cam surface and locking groove in the outer sleeve for acceptance of the locking member (conductive disc) to prevent transverse movement of the inner core members with respect to the outer sleeve (See Estep et al. col. 7, line 6 to col. 8, line 19).

Claims 25, 27 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair in view of Minerbo et al. (US 6,304,086). Sinclair teaches the features of claims 18 and 34 as noted above and a system using multiple antennae. However, Sinclair does not explicitly teach orienting the antenna off parallel. Minerbo et al. teaches orienting multiple antennae off parallel (See Minerbo et al. FIGS. 6, 9 and 10). It would have been obvious to reorient the antennae as taught by Minerbo et al. One having ordinary skill in the art would have been

Art Unit: 2862

motivated to do so to provide directional measurements of the tool axis and direction information regarding the layers around the tool axis (See Minerbo et al. col. 17, lines 23-40 and col. 18, lines 19-62).

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Conclusion

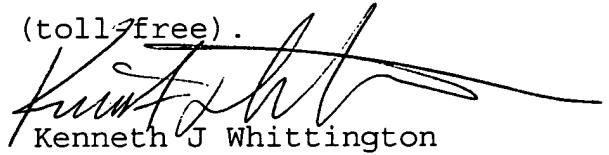
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kopecki et al. (US 6,701,600), Thompson et al. (US 6,288,548) and Clark et al. (US 6,614,229) teach of varying outer sleeve designs and compositions. Gellon et al. (US 3,726,738) and Haluska (US 4,460,638) teach of methods of making carbon fiber and graphite cloth composites.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J Whittington whose telephone number is (571) 272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

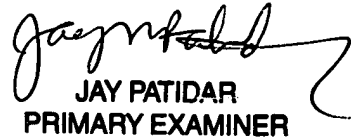
Art Unit: 2862

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status
5 information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kenneth J Whittington
Examiner
Art Unit 2862

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kjw


JAY PATIDAR
PRIMARY EXAMINER